Yadira Gaibor

ygaibor@mit.edu

Education

PhD Candidate Physics — **Massachusetts Institute of Technology**
Division: Astrophysics — *Expected 2026*

Bachelor of Science Physics — **Missouri State University**
Emphasis: Astronomy and Astrophysics — *May 2021*
Minor: Mathematics
Computational Science Certificate

Experience

Physics Mentor Program — **Massachusetts Institute of Technology**
Mentor — *Spring 2024*

- Mentored undergraduate students in various areas such as academic, research and soft skills

WAVE Summer Fellow — **California Institute of Technology**
Supervisor: Dr. Philip Hopkins — *June 2020-August 2020*

- Research on the stochasticity and sources of r-process enrichment events in galaxy formation/evolution
- Developed Python scripts to analyze results of cosmological simulations on three different sized galaxies
- Wrote final report and presented at Caltech Summer Seminar Day

NASA Space Grant Consortium Intern — **Missouri State University**
Supervisor: Dr. Sarah Morrison — *August 2019-May 2020*

- Exoplanet research focused on Warm Jupiter companions and their impact on formation/evolution of these systems.
- Developed code with REBOUND and REBOUNDx N-body integrators to perform dynamical simulations for Kepler planetary systems
- Presented poster at CUWiP and will also present at the annual AAS Division for Planetary Sciences virtual meeting on Oct. 2020

NSF REU Participant — **University of Notre Dame**
Supervisor: Dr. Peter Garnavich — *May 2019-July 2019*

- Research on white dwarf pulsar AR Scorpii with multi-site photometry data
- Developed Python code to extract main pulse from light curve, with the goal of obtaining an improved spin-down rate for white dwarf
- Wrote project report and presented findings at REU Symposium
- Published first-author paper in MNRAS

NASA Space Grant Consortium Intern **Missouri State University**
Supervisor: Dr. Michael Reed *August 2018-May 2019*

- Asteroseismology research on sdB type stars with Kepler K2 Mission data
- Analyzed light curves to look for pulsation patterns (frequency multiplets), in order to determine pulsation period and star rotation
- Presented findings at the NASA-Missouri Space Grant Conference on April 2019

Skills

Computer: Windows OS and Linux , Excel (Intermediate), Python (Intermediate), MATLAB (Intermediate), Mathcad (Beginner), (g)awk, sed, shell scripting, IRAF
Languages: Native Spanish, Fluent English, Conversational French

Memberships and Activities

Warrior Scholar Program Reasearch Staff *June 2024*
American Astronomical Society Member *July 2020-Present*

Conferences and Workshops

TDAMM NASA Workshop *August 2022*
- Speaker in the Merger-Driven Transients session

AAS 240 meeting *June 2022*
- Poster title: "Constraining occurrence rates of short-period post-common envelope binaries"

AAS DPS Meeting *Oct. 2020*
- Poster title: "Constraints on Warm Jupiter Formation and Evolution from Planetary Companions"

FUTURE of Physics at Caltech *Sept. 2020*
51st DDA Virtual Meeting Attendee *Aug. 2020*
Sagan Summer 2020 Workshop Attendee *July 2020*
Conference for Undergraduate Women in Physics *Jan. 2020*
(University of Oklahoma)
- Poster title: "The Mysterious Mechanisms of Warm Jupiter Multi Planet System Formation"

NASA-Missouri Space Grant Conference *Apr. 2019*
- Oral presentation: Pulsation Modes of sdB Star PG0850+170

Publications

Y. Gaibor, P. M. Garnavich, C. Littlefield, S. B. Potter, D. A. H. Buckley. (2020). *An improved spin-down rate for the proposed white dwarf pulsar AR scorpii*. MNRAS, 496(4), 4849-4856. doi:10.1093/mnras/staa1901